<u>R e m a r k s</u>

I.     **Status of the Application**

Claims 1-70 and 72-91 are pending in the application.  Claims 1, 2, 7-9, 11, 16-17, 19,

21, 24-25, 27, 29, 32-35, 40-42, 44, 49, 50-52, 54, 57-60, 62, 65-70, 72-74, and 76-79 are

amended.  Claims 71 and 80 are cancelled.  Claims 81-91 are added.


II.    **Specification**

The specification has been objected to for allegedly failing to provide support for certain

limitations of claim 71.  In particular, the Examiner has pointed out "disconnecting the source

storage system from the host" and "establishing a second connection between the target storage

system and the host."

Claim 71 has been cancelled.  Limitations similar to those of claim 71 have been added to

independent claim 67, and are supported by the specification as explained below.

Referring to amended claim 67, support for the limitation, "<u>discontinuing direct</u>

<u>communications between the host device and the source storage device</u>," is found in Figs. 1 and

3, for example.  Fig. 1 shows a host device 110 connected directly to a "source storage system

115."  Fig. 3 shows the host device 110 connected directly to a "target storage system 415."  In

Fig. 3, the direct connection between the host device 110 and the source storage system 115 has

been severed, and the target storage system 415 has been placed in between.  Thus, "direct

communications" between the host device 110 and the "source storage system 115" have been

discontinued, as claimed.

Additional support for the above limitation is found in the specification, at page 8, lines 3-14, for example. In particular, the Specification states that after the host begins submitting commands to the target storage system, the host "ceases communicating with source storage system."

### III.    Claim Rejections - 35 U.S.C. § 102

Claims 1-10, 19-43, 52-68, 70-73, 75-77, and 79-80 have been rejected under 35 U.S.C. 102(e) as being allegedly anticipated by US Publication No. 2006/0010154 ("Prahlad"). Applicants have amended claims 1, 2, 7-9, 19, 21, 24-25, 27, 29, 32-35, 40-42, 52, 54, 57-60, 62, 65-68, 70, 72-73, and 79, and respectfully traverse the rejection.

Prahlad

Prahlad discloses a method for accessing data files <u>after</u> the files have been migrated from a first location to a second location. Prahlad copies a file from a first, original, storage location to a second storage location, leaving a "stub" file at the <u>original</u> location. (Paragraph [0048]). The stub file contains a pointer pointing to the location in the second storage location. [0048]. Consequently, when a client computer attempts to read data from the file, the computer accesses the <u>original</u> storage location in an attempt to find the file; however, the stub file is found. [0049]. The pointer in the stub file redirects the computer to the <u>new</u> location of the file. The computer then reads data from the file at its new location. [0049].

Amended Claim 1

Independent claim 1 defines a method for migrating one or more data files stored on a

source storage device to a target storage device.  Claim 1 has been amended to require "receiving

from a host <u>device</u> a request specifying a data file," "examining a stub file stored on the target

storage device that corresponds to the specified data file, wherein the stub file contains a pointer

identifying a source data file stored on the source storage device that corresponds to the specified

data file" and "copying the source data file from the source storage device to the target storage

device<u>, based at least in part on information in the pointer</u>."  Support for the amendments to

claim 1 is found at page 13, line 20 to page 14, line 10, for example.

Independent claim 34 is a system claim that corresponds to claim 1.

Prahlad does not teach or suggest "copying the source data file from the source storage

device to the target storage device<u>, based at least in part on information in the pointer</u>," as

required by amended claim 1, or a processor configured to do so, as required by amended claim

34.  The applicants emphasize that the claimed "pointer" is located in a stub file that is examined

<u>in response to a request</u>.  The Office Action asserts that paragraphs [0035] and [0049] read on

the (unamended) limitation "copying the source data file from the source storage device to the

target storage device."  Paragraph [0035] merely states that "electronic data that has been

previously transferred from a first location to a second location is transferred back or otherwise

restored to the first location."  There is no mention that the data is transferred based on a pointer

that is examined <u>in response to a request</u>, as required by amended claim 1.  Paragraph [0049]

discloses that an operating system "may read the stub file at step 402 and recognize that the data

is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file." However, paragraph [0049] does not teach or suggest copying a file based on information in a pointer, in response to a request, as claimed.

None of the other cited art teaches or suggests these limitations, either. Accordingly, claim 1 and amended claim 34, and their respective dependent claims, are patentable over the cited art.

Amended Claim 19

Claim 19 defines a method for migrating one or more data files stored on a source storage device, to a target storage device. Claim 19 has been amended to require "storing in a target storage device a plurality of target data files corresponding respectively to respective ones of a plurality of source data files stored in a source storage device" and "storing in each respective target data file information identifying the corresponding source data file." Claim 19 has been further amended to require "activating a migration procedure to copy data from the source storage device to the target storage device, after target data files have been stored for all source data files in the plurality" and "receiving from a host device a request specifying a data file, while the migration procedure is executing." Claim 19 has been additionally amended to require "examining, in a target data file corresponding to the specified data file, selected information identifying a source data file," "retrieving requested data," and "providing the requested data to the host device." Support for the amendments to claim 19 is found at page 12, lines 1-9, and at page 16, lines 13-22, for example.

Claim 52 is a system claim that corresponds to amended claim 19, and has been amended in a similar manner.

Prahlad does not teach or suggest the combination of amended claim 19 or amended claim 52. For example, Prahlad does not teach or suggest (1) storing in multiple "target data files" information identifying respective "source data files," (2) "activating a migration procedure to copy data from the source storage device to the target storage device, after target data files have been stored for all source data files in the plurality" and (3) "receiving from a host device a request specifying a data file, while the migration procedure is executing," as required by amended claim 19, or a processor and interface configured to do so, as required by amended claim 52.

While Prahlad discloses copying files to a "secondary storage" and storing a stub file at the original location on an individual file basis, nowhere does Prahlad teach or suggest executing an overall migration strategy that includes performing the three activities enumerated above. More specifically, while Prahlad discloses storing stub files on an individual basis, Prahlad does not teach or suggest storing a stub file for "storing in a target storage device a plurality of target data files corresponding respectively to respective ones of a plurality of source data files stored in a source storage device," and activating a migration procedure after stub files have been created for all the source data files, as claimed. Prahlad also does not teach or suggest receiving a request from a host device "while the migration procedure is executing," as claimed.

None of the other cited references teaches or suggests the combination of amended claim 19 or that of amended claim 52, either. Therefore, amended claims 19 and 52, and their respective dependent claims, are patentable over the cited art.

Amended Claim 27

Amended claim 27 defines a method for migrating one or more data files stored on a
source storage device, to a target storage device. Claim 27 has been amended to require
"generating a target file directory in a target storage device based on a source file directory
associated with a set of source data files stored in a source storage device," "storing in the target
storage device a respective target data file corresponding to each respective source data file in
the set," and "storing in each respective target data file first information identifying the
corresponding source data file." Claim 27 has been further amended to require "receiving from a
host device a request specifying a data file" and "copying from the source storage device to the
target storage device second information concerning rights of users to access the source data
files." Claim 27 has been additionally amended to require "accessing a target data file
corresponding to the specified data file," "examining first information in the accessed target data
file identifying a source data file," and "copying the identified source data file to the target
storage device." Support for the amendments to claim 27 is found at page 11, line 15 to page 12,
line 9, for example.

Amended claim 60 is a system claim that corresponds to amended claim 27 and has been
amended in a similar manner.

Prahlad does not teach or suggest "copying from the source storage device to the target
storage device second information concerning rights of users to access the source data files," as
required by amended claim 27, or a processor configured to do so, as required by amended claim
60. The Office Action cites paragraph [0033] against claim 77, which also requires "copying

information concerning rights of users." Paragraph [0033] states that a storage policy "is generally a data structure or other limitation that includes a set of preferences and other storage criteria for performing a storage operation." Several examples of preferences and storage criteria are listed. However, nowhere in paragraph [0033] does Prahlad mention in any way <u>copying</u> information concerning rights of users to access "source data files," as claimed. If the Examiner believes that performing such a task is implied in some way by paragraph [0033], the Examiner is respectfully requested to state his or her reasoning.

<u>Claim 67</u>

Amended claim 67 defines a method for migrating one or more data files stored in a source storage <u>device in direct communications with a host device</u> to a target storage <u>device</u>. Claim 67 has been amended to require "storing, in a target storage <u>device</u>, a <u>target data</u> file comprising information identifying a location of <u>the</u> source data file stored in <u>the</u> source storage <u>device</u>." Claim 67 has been further amended to require "<u>discontinuing direct communications</u> <u>between the host device and the source storage device</u>" and "receiving from a host <u>device</u> a <u>second</u> request specifying the <u>target data</u> file." Claim 67 has also been amended to require "examining the information in the <u>target data</u> file, in response to the <u>second</u> request," "accessing the source data file based on the information," and "copying the accessed source data file from the source storage <u>device</u> to the target storage <u>device</u>."

As discussed above under the Section entitled "**II. Specification,**" the specification provides support for the limitation, "<u>discontinuing direct communications between the host</u> <u>device and the source storage device</u>."

Prahlad does not teach or suggest "discontinuing direct communications between the host device and the source storage device," as required by amended claim 67. Referring to Fig. 2 of Prahlad, the "network devices 85" are connected to the "NAS device 100" via the "network 90." The "data migrator 95" stores data generated by the "network devices 85" in the "primary storage device 102." The "network devices 85" and the "NAS device 100" are also connected to the "secondary storage devices 120 and 130" via the "network 90." This disclosed configuration does not meet the claimed limitation in question, because there is no teaching or suggestion that "direct communications" ever occur between the "network devices 85" and the "primary storage device 102." Thus, "discontinuing direct communications" between the "network devices 85" and the "primary storage device 102," as required by amended claim 67, cannot occur, either.

None of the other cited references teaches or suggests the combination of amended claim 67, either. Therefore, amended claim 67 and its dependent claims are patentable over the cited art.

Claim 72

Claim 72 has been amended to require one or more storage systems configured to "copy information concerning rights of users to access the source file from the source storage system to the target storage system." For the reasons set forth above with respect to amended claim 27, Prahlad does not teach or suggest this limitation.

None of the other cited references teaches or suggests the combination of amended claim 72, either. Therefore, amended claim 72 and its dependent claims are patentable over the cited art.

### IV.    Claim Rejections - 35 U.S.C. § 103

Claims 11-18, 44-51, 69, 74, and 78 have been rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Prahlad in view of U.S. Patent No. 6,981,005 ("Cabrera"). Applicants have amended claims 11, 16-17, 44, 49, 50-51, 69, 74, and 78, and respectfully traverse the rejection.

Claim 11 defines a method for migrating one or more data files stored on a source storage device to a target storage device. Claim 11 has been amended to require "receiving from a host device a request specifying a data file." Claim 11 also requires "examining a stub file stored on the target storage device that corresponds to the specified data file, wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file," and "determining a size of the source data file." Claim 11 further requires "copying the source data file from the source storage device to the target storage device based at least in part on information in the pointer and on the size of the source data file." Claim 44 is a system claim corresponding to amended claim 11, and has been amended in a similar manner.

Prahlad is discussed above. The Examiner has admitted in the Office Action that Prahlad does not teach or suggest the (unamended) limitation, "copying the source data file from the source storage device to the target storage device, if the size of the source data file does not exceed a predetermined limit," as required by (unamended) claim 11. Instead, the Office Action asserts that Cabrera teaches this limitation. The applicants respectfully disagree.

Cabrera discloses, in part, a mechanism to provide on-disk file memory allocation limits to limit the size of a file/stream. (Col. 10, lines 30-37). When the size of archive units and size(s) of region(s) of updates may be specified, when the size of the file is also limited due to a

storage allocation limit, the disclosed technology provides a mechanism for enforcing the storage allocation limit. In a disclosed example, a file's growth is limited by a storage allocation limit. (Col. 10, lines 37-47). At a first time t1, the file is allowably within the constraint. At a second time t2, the file has reached the maximum size allowed by the constraint. At a third time t3, its size has exceeded the constraint, but portions of the file are migrated to remote storage, thereby preventing breach of the quota.

Nowhere does Cabrera (or Prahlad) teach or suggest "copying the source data file from the source storage device to the target storage device based at least in part on information in the pointer and on the size of the source data file," as required by amended claim 11. The method described in Cabrera and discussed above allows data to be copied from one location to another location, but does not do so based on information in a "pointer" stored in a stub file, as claimed.
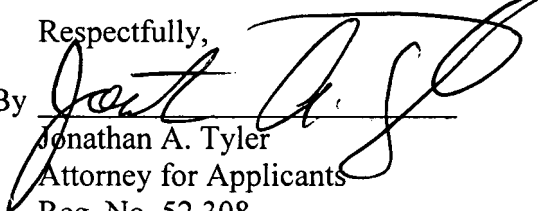
None of the other cited references teach or suggest this limitation, either. Therefore, amended claims 11 and 44, and their respective dependent claims, are patentable over the cited art.

## V.     New Claims 81-91

New claims 81-91 have been added to define various features described in the specification. Each of claims 81-91 is supported by the specification and/or the original claims. No new matter has been added.

## VI.   Conclusion

In view of the foregoing, each of claims 1-90, as amended, is believed to be in condition

for allowance. Accordingly, entry and reconsideration of these claims are respectfully requested.

Respectfully,

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